

ANALYSIS OF FAMILY PRIMULACEAE FROM CARL STUDNICZKA'S HERBARIUM

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Abstract: In the C. Studniczka's herbarium we have found new herbarium folder which contain herbarium samples from family *Primulaceae* (Ord. Primulaceen) which one part has already been analysed (Vladović et al., 2014b). We analysed the data from the new map and integrated with already known data for the family *Primulaceae*. Most of the analysed herbal material (95 herbarium sheets, with 391 samples of herbal plants) in this part of the C. Studniczka's herbarium were collected in Europe (87 herbarium sheets). According to the labels, the majority of herborized material was collected in the area of Austria (27 herbarium sheets). Most herbarium sheets belong to Flora Dalamtiens collection (11) - including Flora Süddalmatiens collection. In reference to the part of Studniczka's herbarium which has already been analysed, there is one botanist or collector which is mentioned for the first time: Hieronymus. Most herbarium sheets were collected by Studniczka himself (38). The oldest herbarium sheets dates from 1866, where as the newest ones date from 1904. The exact year of collection is missing from 6 herbarium labels.

Keywords: Studniczka's herbarium, Natural History Museum Split, Croatia.

Introduction

Since 2005, we have been working on Carl Studniczka's herbarium which can be found in the Natural History Museum in Split. As a botanist amateur, Carl Studniczka collected plants while he was traveling (1869-1904) and working as an officer (data are known from herbarium labels: wide surrounding area of Vienna and Wiener Neustadt in Austria; of Split, Hvar and Dubrovnik in Croatia; of Celje, Koper and Izola in Slovenia; of Kotor and Herceg Novi in Montenegro; of Olomouc and Leitmeritz in the Czech Republic; of Przemysl in Poland and at last the wide surrounding area of Trieste in Italy). The analysis has shown that this herbarium contains samples of the plants which were collected and sent to Studniczka by many botanists or collectors of that time.

Material and Methods

In this paper we analysed the herbarium sheet from family Primulaceae. From the labels of the herbarium sheets first, we copied the Latin name of the genus and the species; then the date, month and year of collection; followed by the collector (A-Ayasse, Al-Alioth, Au-Ausserdorfer, B-Baenitz, Br-Brandmayer, Be-Brendel, Bo-Bordère, E-Eggert, En-Engelmann, F-Freyne, G-Gandoger, Gr-Graf, H-Halácsy, Hi-Hieronymus, Hu-Huter, H/P-Huter et Porta, K-Körnicker, Kr-Kristof, Ku-Kumlien, L-Lagger, Li-Lievre, R-Ressmann, Ri-Richter, S-Studniczka, Sc-Schemmann, St-Strobl, T-Tauscher, W-Wiesbaur, Z-Zetterstedt, Z/W-Zetterstedt et Wickbom) and the affiliation to the particular herbarium collection (F-Flora Algeriensis

exsiccata, FA-Flora Austriae inf., FAu-Flora Austriaca, FB- Flora Böhmens, FC-Flora Carinthiaca, FD-Flora Dalmatiens, FG-Flora Gallica exsiccata, FH-Flora Hungarica, FHe-Flora helvetica, FI-Flora Istrien, FN-Flora von Nieder- Oesterreich, FO-Flora von Obersteiermark, FP-Flora von oesterr. Polen, FR-Flora von Russland, FS-Flora Süddalmatiens, FT-Flora von Triest, FW-Flora von Wien, FWr-Flora von Wr Neustadt, H-Eggert, Herbarium Americanum, HE-C. Baenitz, Herbarium Europaeum, HH-Herbarium Dr E. Halácsy, HS-Herbier de la Société d'Histoire Naturelle de Colmar, PV-Kumlien, Plante Visconsin, PS-Plante Scandinavicae, S-Societas Helvetica). According to The Plant list and USDA plants Database we listed the name of the species in brackets; from the label we copied the numeric sign, name of the place where the plant had been found with altitude data if available and listed the number of herbarium samples in brackets.

Results and Discussion

List of species

1. *Aletris farinosa* L. **En** (*A. farinosa* L.) Louisiana (1) fam. **Nartheciaceae**
2. *Androsace chamaejasme* Host 7.1877. **H HH** (*A. chamaejasme* Wulfen) In pascuis alpinis montis Schneeber 4-5000' solo calc. (4)
3. *A. elongata* L. 8.4.1873. **F** (*A. elongata* L.) Siebenbürgen. Brachäcker bei Klausenburg Fert. Fegel 360 m (7)
4. *A. elongata* L. 8.4.1882. **S FB** (*A. elongata* L.) sandige Hügel ober Schüttenitz (7)
5. *A. glacialis* Hoppe 12.8.1873. **H/P** (*A. alpina* /L./ Lam.) Lombardia. dit. Bresciana in mte Frerone vallis di Bagolino sol. granit. 7000' (9)
6. *A. helvetica* Gaud. 10.6.1866. **Al** (*A. helvetica* /L./ All.) Klimeshorn, Pilatus (12)
7. *A. lactea* 19.6.1868. **Hi FHe** (*A. lactea* L.) Stock horn im Berner Oberland (7)
8. *A. lactea* L. 6.1873. **Br FAu** (*A. lactea* L.) am Almensattel auf steig zum Schneeberg bei Puchberg (15)
9. *A. lactea* L. 13.7.1899. **S FWr** (*A. lactea* L.) am Schneeberg 6000' (2)
10. *A. maxima* L. 20.4.1893. **S FN** (*A. maxima* L.) Aecker um Wr Neustadt (6)
11. *A. obtusifolia* All. 28.6.1869. **Li** (*A. obtusifolia* All.) Tirol, Schlern, alpentriften dolomit 6-7000' (4)
12. *A. obtusifolia* All. 7.1875. **R FC** (*A. obtusifolia* All.) Wolliggeralpe (2)
13. *A. occidentalis* Pursh. 25.4.1874. **E H** (*A. occidentalis* Pursh) Am Mississippi b. Cahokia. Ills (5)
14. *A. septentrionalis* L. 6. **K FR** (*A. septentrionalis* L.) Ufer der Ohta bei Petersburg (3)
15. *A. septentrionalis* L. 24.5.1872. **S FW** (*A. septentrionalis* L.) am sooser Lind kogel (4)
16. *A. septentrionalis* L. 14.5.1882. **S FB** (*A. septentrionalis* L.) sandige Waldplatze im Travčice Wald nächst Theresienstadt (10)
17. *A. tauscheri* Gandoger 20.5.1875. **T SH** (*A. villosa* L.subsp. *taurica* /Ovcz./ Fed.) Hungaria centralis Comitatus Alba E graminosis montanis prope Kulyavár (5)
18. *A. tauscheri* Gand 5.1877. **Ri FH** (Ex herb. Richter) (*A. villosa* L.subsp. *taurica* /Ovcz./ Fed.) Ort Ofen Blocksberg Unterlage dolomit Höhe 70 m (5)
19. *A. villosa* L. 15.7.1869. **Kr** (*A. villosa* L.) Hoch obir in Kärnten, über 6500-6700' (4)
20. *A. villosa* L. β *virescens* 8.8.1899. **S FWr** (*A. villosa* L.) am Kaiserstein das Schneeberges 6800' (11)
21. *Ammannia humilis* Michx. 22.9.1875. **E H** (*Rotala ramosior* /L./ Koehne) Missisippithal in Ills. (4) fam. **Lythraceae**
22. *A. latifolia* L. 20.9.1875. **E H** (*A. latifolia* L.) An Blüffs Eisenbahn in Ills. (1) fam. **Lythraceae**
23. *Aretia pennina* Gaud. **L** (*Androsace alpina* /L./ Lam.) In monte Gries in Valeria superiori. (2)
24. *Comandra umbellata* Nutt.-Griseb. **Ku PV** (*C. umbellata* /L./ Nutt.) 152. Albion, Dane Countr. (2) fam. **Santalaceae**
25. *Coris monspeliensis* L. 1879. **G F** (*C. monspeliensis* L.) No 928 Hab. in ditione urbis Alger, loco dicto Mustapha (4)
26. *Corthusa mathioli* L. 6.1871. **Au** (*Primula mathioli* /L./ K.Richt.) Tirol austr. orient. ad terrentes et scaturigines in vallibur Virgen et Praegraten 5-5500' solo schistaceo calcar. Mixto (2)
27. *Cortusa mathioli* L. 6.1873. **Br FN** (*Primula mathioli* /L./ K.Richt.) Am Obersberge in der

Schwarzau im Gebirge (2)

28. *Cyclamen europaeum* L. 22.7.1893. **S FN** (*C. purpurascens* Mill.) Wälder um Wr Neustadt /:Kalkofen Malleiten:/ (3)

29. *C. europaeum* L. 12.8.1897. **S FWr** (*C. purpurascens* Mill.) hohe Wand (2)

30. *C. europaeum* L. 14.10.1902. **S FT** (*C. purpurascens* Mill.) in Gebüsch an der Napoleonstrasse ober Barcola (1)

31. *C. hederifolium* Ait. = *C. neapolitanum* Ten. 9.1876. **S FD** (*C. hederifolium* Aiton) zwischen Gestrüpp, felsigen Orten um Castelnuovo (2)

32. *C. neapolitanum* Ten 11.1875. **S FS** (*C. hederifolium* Aiton) Villa Roitsch bei Spalato (2)

33. *C. verum* Reich. = *C. repandum* Sibth & Sm 5.1878. **S FD** (*C. repandum* Sm.) Gestrüch ü. felsige Orte won dem dorfe Leševice in der Zuppa gegen Traste (3)

34. *Glaux maritima* L. 27.7.1871. **B** (*Lysimachia maritima* /L./ Galasso, Banfi & Soldano) Dänzig: Strand bei Weichselmünde (6)

35. *Hottonia palustris* L. 5.1882. **S FB** (*H. palustris* L.) an der alten Eger bei Theresienstadt (5)

36. *Hydrolea affinis* Gray **Be** (*H. uniflora* Raf.) Palester Cv. Illinois (1) fam. **Hydroleaceae**

37. *Ludwigia alternifolia* L. 10.8.1875. **E H** (*L. alternifolia* L.) Gräben hinter d. Forest Park (1) fam.

Onagraceae

38. *Primula acaulis* Jacq. 5.2.1873. **S FD** (*P. vulgaris* Huds.) in feuchten Gebüsch um Castelnuovo (3)

39. *P. acaulis* Jacq. = *P. grandiflora* Lam. 4.1879. **A** (*P. vulgaris* Huds.) Les haies et bois à Genève (2)

40. *P. acaulis* Jacq. 20.4.1901. **S FT** (*P. vulgaris* Huds.) im Wald won Rojano (7)

41. *P. auricula* L. 18.4.1871. **Br FAu** (*P. auricula* L.) felsen des Maaberges bei Mödling (2)

42. *P. clusiana* Tausch 1.6.1873. **Br FAu** (*P. clusiana* Tausch) Am Obersberge in der Schwarzau im Gebirge (5)

43. *P. clusiana* Tausch 6.1878. **H FA** (*P. clusiana* Tausch) In petrosis alpinis mt. Raxalpe 5-6000' (4)

44. *P. comutata* Schott. 4.1876. **Gr** (*P. villosa* Wulfen) Stiria. St. Johann bei Herberstein (3)

45. *P. elatior* Jcq. 4.1873. **H FA** (*P. elatior* /L./ Hill) In pratis mont. ad Rekawinkel (3)

46. *P. elatior* L. 4.1885. **S FP** (*P. elatior* /L./ Hill) mehr sonnige Hügel um Przemysl (3)

47. *P. elatior* Jacq. f. *brachyphylos* 9.4.1873. **Sc HE** (*P. elatior* /L./ Hill) No 3662 Annen. Wiesen (3)

48. *P. elatior* Jacq. f. *macrostylos* 17.4.1874. **Sc HE** (*P. elatior* /L./ Hill) No 3663 Annen. Wiesen (3)

49. *P. farinosa* L. 14.5.1872. **S FW** (*P. farinosa* L.) sumpfige Wiesen zu Laxenburg, Achau, Himberg & Velm. (2)

50. *P. farinosa* L. 15.5.1894. **S FN** (*P. farinosa* L.) Sümpfwiesen bei Stollhof (neür Wald) (6)

51. *P. glutinosa* L. 8.1873. **Gr** (*P. glutinosa* Wulfen) Stiria. Hochzinken 7500' (1)

52. *P. integrifolia* L. 5.1873. **Br FN** (*P. integrifolia* L.) Schwaben wiese Puchberg (4)

53. *P. intricata* G.G. 6. **Bo HS** (*P. elatior* /L./ Hill subsp. *intricata* /Gren. & Godr./ Widmer) Localité Gavarnie Htes Pyr, Station paturages froids Altitude 1400 m Terrain calcaire (5)

54. *P. minima* L. 9.7.1870. **B** (*P. minima* L.) Reisegebirge: kleiner Teich (5)

55. *P. montana* Opitz 3.4.1877. **G FG** (*P. elatior* /L./ Hill) No 990. Hab. in collibus prope Denicé (Rhône) (2)

56. *P. officinalis* Jacq. v. *macrostylos* Peterm. 18.5.1874. **B HE** (*P. veris* L.) Königsberg i Pr.: Wälder bei Schlobitten (2)

57. *P. officinalis* Jacq. 5.1882. **S FB** (*P. veris* L.) Kreutzberg bei Leitmeritz in Wäldern (2)

58. *P. officinalis* Scop. 9.5.1897. **S FWr** (*P. veris* L.) auf d. Malleiten bei fischau (3)

59. *P. scotica* Hook. 3.7.1870. **Z/W** (*P. scotica* Hook.) Norvegia: Dovre, Kongsvold in pratis uliginosis (3)

60. *P. stricta* Horn. 4.7.1868. **Z** (*P. stricta* Hornem.) Norge, Finmarken, Alten, Bosekop. (1)

61. *P. stricta* Horn. 27.6.1870. **Z PS** (*P. stricta* Hornem.) Dovre: Harbakken (2)

62. *P. suaveolens* Bertol. 13.5.1874. **A** (*P. veris* L. subsp. *suaveolens* /Bertol./ Gutermann & Ehrend.) Garnié les buissons à Genthod près Genève (1)

63. *P. suaveolens* Bertol. 23.6.1875. **S FD** (*P. veris* L. subsp. *suaveolens* /Bertol./ Gutermann & Ehrend.) im Wäldern des Biokovo 2-4000' (2)

64. *P. suaveolens* Bertol. 22.6.1879. **S FD** (*P. veris* L. subsp. *suaveolens* /Bertol./ Gutermann & Ehrend.) Waldblößen am Vuči zub des Orien in der Krivošie 4-5000' (1)

65. *P. tirolensis* Schott = *P. allionii* Koch et Kern 18.6.1872. **H** (*P. tirolensis* Schott) Venetia, dit. d' Agordo ad mtem Civetta pr. Alleghe loc. dict. Entrass rup. dolomitic. 3400' (5)

66. *P. variabilis* Goupil (*P. offi. x acaulis*) 18.4.1874. **W HE** (*P. × polyantha* Mill.) Kalksburg bei Wien. Park (6)
67. *P. vulgaris* Huds. β *caulescens* Neilr. 4.1877. **H FA** (*P. vulgaris* Huds.) In silvis montis Auninger ad Viennam (2)
68. *Samolus floridibus* HB.K. 9.9.1875. **E H** (*S. floribundus* Kunth) Blüffs in Ills. (3)
69. *S. valerandi* L. 27.6.1874. **S FS** (*S. valerandi* L.) Sümpfe bei Stobrez (1)
70. *S. valerandi* L. 5.1878. **S FD** (*S. valerandi* L.) quellige Orte nächst Glavati bei Cattaro (3)
71. *S. valerandi* L. 15.6.1904. **S FI** (*S. valerandi* L.) in Gräben längst der Bahn von Semedella (5)
72. *Soldanella alpina* L. 6. **Br FN** (*S. alpina* L.) Schneeberg (5)
73. *S. minima* Hpp. 29.4.1869. **St FO** (*S. minima* Hoppe) In der Waldregion um Admont Kalkshütt auf der Büchhäü 3000' (5)
74. *Triosteum perfoliatum* L. 16.6.1875. **E H** (*T. perfoliatum* L.) hinter d. Schülzenpark (2) fam. **Caprifoliaceae**

Total number of the herbarium sheets in analysed family is 95 (with 391 samples of herbal plants). The majority of the plants was collected in Europe (87 herbarium sheets), 6 sheets originate from North America and two sheets originate from Africa.

Most of the herbarium samples were collected in the area of Austria (27 herbarium sheets) and: Italy (9), Poland (8), Czech Republic (7), Germany (7), Montenegro (6), USA (6), Croatia (5), France (4), Switzerland (4), Norway (3), Algeria (2) Romania (2) and Slovenia (2). One herbarium sheet was collected in: Belgium, Hungary and Russia. According to the affiliation to a particular herbarium collection in analysed families or their parts the most represented is Flora Dalmatiens (including Flora Süddalmatiens collection) with 11 herbarium sheets. This is followed by other collections, such as: Flora Böhmens (6), C. Baenitz Herbarium Europaeum (6), Flora von N. Oesterreich (6) - including Flora von Nieder- Oesterreich collection, Flora von Triest (5), Flora von Wr. Neustadt (5), Flora von oesterr. Polen (4), Eggert Herbarium Americanum (4) and others. There are 19 herbarium sheets that are unmarked and therefore we do not know which herbarium collection they belong to.

Most of the samples of herbarium plants were collected by Studniczka himself (38 herbarium sheets), while others were sent to him by: Brandmayer (6), Gandoger (4), Halácsy (4), Eggert (4), Baenitz (3), Körnicke (3), Schemmann (3) and others. In the part of the herbarium which has already been analysed (compare with 1, 2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36), there is one botanist or collector of the herbal material which is mentioned for the first time: Hieronymus.

The oldest herbarium sheet dates from 1866, where as the newest ones date from 1904. The vast majority of herbarium sheets (56), was collected during the period from 1870 to 1880. The exact year of collection is missing from 6 herbarium labels.

According to Studniczka, within 95 herbarium sheets (order Primulacen) there are 15 genera with 59 species, and 7 varieties.

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ANALIZA FAMILIEI PRIMULACEAE DIN HERBARUL CARL STUDNICZA

(Rezumat)

În herbarul C. Studniczka au fost găsite coli noi de herbar cu exemplare aparținând familiei *Primulaceae* dintre care, o parte au fost deja analizate (Vladović et al., 2014b). Au fost studiate noile date și apoi corelate cu informațiile deja cunoscute pentru familia *Primulaceae*. Cele mai multe dintre colile de herbar analizate (95 coli, 391 de exemplare) din herbarul C. Studniczka, au fost colectate în Europa (87 coli de herbar). Conform etichetelor a rezultat că majoritatea exemplarelor au fost colectate din Austria (27 coli de herbar). Dintre acestea 11 coli de herbar aparțin Florei Dalmației - incluzând aici colecția din Flora Dalmației de Sud. Referindu-ne la partea din herbarul C. Studniczka care a fost deja analizată observăm numele unui botanist sau culegător care este menționat pentru prima dată: Hieronymus. Cele mai multe coli de herbar au fost colectate de C. Studniczka însuși (38). Cele mai vechi coli de herbar datează din anul 1866, iar cele mai noi din anul 1904. La un număr de 6 coli de herbar nu se cunoaște anul colectării.